

Claims

1. Standard micro-component for calibrating and standardizing fluorescence
5 measuring instruments comprising a substrate (1) whereon there is arranged at
least one thin layer (2, 6) comprising fluorescent components, said micro-
component comprising at least first and second fluorescence levels, micro-
component characterized in that the first and second fluorescence levels are
respectively defined by a non-exposed part and by at least one exposed zone
10 (2a) of said thin layer (2, 6), the second fluorescence level being lower than the
first fluorescence level.
2. Standard micro-component according to claim 1, characterized in that the thin
layer (2, 6) comprises at least one opening (3) defining a third fluorescence
15 level lower than the first and second fluorescence levels.
3. Standard micro-component according to claim 2, characterized in that the third
fluorescence level corresponds to the fluorescence level of the substrate.
- 20 4. Standard micro-component according to any one of the claims 2 or 3,
characterized in that the third fluorescence level is at least 10 times lower than
the first fluorescence level.
5. Standard micro-component according to claim 4, characterized in that the third
25 fluorescence level is at least 100 times lower than the first fluorescence level.
6. Standard micro-component according to any one of the claims 1 to 5,
characterized in that the thin layer (2, 6) is formed by a fluorescent material.

7. Standard micro-component according to any one of the claims 1 to 6, characterized in that the thin layer (2, 6) comprises a plurality of exposed zones so as to define a plurality of different fluorescence levels.
- 5 8. Standard micro-component according to any one of the claims 1 to 7, characterized in that the thin layer (2, 6) is formed by a photosensitive resin.
9. Standard micro-component according to any one of the claims 1 to 8, characterized in that the substrate (1) is formed by a material selected from the group consisting of silicon, synthetic silica, quartz, plastics and glasses.
- 10 10. Standard micro-component according to any one of the claims 1 to 9, characterized in that at least a part of the thin layer (2, 6) is covered by a protective thin layer (9).
- 15 11. Standard micro-component according to claim 10, characterized in that the protective thin layer (9) is transparent to optical reading signals received and sent back by the thin layer (2, 6).
- 20 12. Standard micro-component according to either one of the claims 10 and 11, characterized in that the micro-component (4) comprises a plurality of stacked protective thin layers (9).
- 25 13. Standard micro-component according to any one of the claims 10 to 12, characterized in that the material forming the protective thin layer (9) is selected from the group consisting of the following materials: TiO_2 , Ta_2O_5 , HfO_2 , ZrO_2 , MgO , SiO_2 , Si_3N_4 , MgF_2 , YF_3 , Al_2O_3 , ZrO_4Ti , Y_2O_3 , diamond and oxynitrides.

14. Standard micro-component according to any one of the claims 10 to 13, characterized in that the thickness of the protective thin layer (9) is calculated using the following formula: $n \cdot e = k \cdot \lambda / 4$, in which n is the refractive index of the material composing the protective thin layer (9) for a wavelength λ of the optical reading signal received by the thin layer (2, 6), e is the optical thickness of the protective thin layer (9) and k is an odd integer.

15. Standard micro-component according to any one of the claims 1 to 14, characterized in that the standard micro-component (4) comprises a plurality of stacked thin layers (2, 6) so as to define a plurality of fluorescence levels.

16. Standard micro-component according to claim 15, characterized in that the openings (3) of at least two thin layers (2, 6) are superposed.

17. Biochip characterized in that it comprises, on a single substrate, at least one biological sensor and at least one standard micro-component according to any one of the claims 1 to 16.

18. Fabrication process of a standard micro-component according to any one of the claims 1 to 16, comprising deposition on a substrate (1) of at least one thin layer (2, 6) comprising fluorescent components, process characterized in that it consists in exposing at least one zone (2a) of the thin layer (2, 6) so that first and second fluorescence levels are respectively defined by the non-exposed part and by the exposed zone (2a) of the thin layer (2, 6).

19. Fabrication process of a standard micro-component according to claim 18, characterized in that it comprises deposition, on the substrate (1), of a plurality of stacked thin layers (2, 6).

- 20.** Fabrication process of a standard micro-component according to any one of the claims 18 and 19, characterized in that it comprises deposition of a protective thin layer (9) after exposure.